

REMARKS

This application has been carefully reviewed in light of the Office Action dated May 4, 2005. Claims 1 to 8, and 17 to 22 are currently in the application, with claims 1, 2, 6, 17, 19, and 22 being independent claims. Claims 9 to 16 have been cancelled without prejudice or disclaimer of the subject matter contained therein. Reconsideration and further examination are respectfully requested.

Claims 1 to 8 and 17 to 22 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,336,174 ("Li"); and Claims 9 to 16 were rejected under 35 U.S.C. § 102(e) also over Li.

Without conceding the correctness of the foregoing rejections, Applicants have canceled Claims 9 to 16, thereby rendering the § 102(e) rejection moot. Further, Applicants have reviewed the applied reference and respectfully submit that Claims 1 to 8 and 17 to 22 are patently distinguishable over Li for at least the following reasons.

The present invention generally concerns a non-volatile memory device that is powered by a host system and used to store data received from the host system. Typically, the memory device will include a buffer of volatile memory used to temporarily store the data received from the host system until the memory device is able to write the data to the non-volatile memory. In the event the host system is unable to provide sufficient power to operate the memory device, the invention uses an auxiliary power source to complete any pending operations storing data from the buffer into the non-volatile memory. In this manner, write operations to the non-volatile memory are safely completed thereby preserving data transferred from the host system and greatly reducing the risk of data corruption.

With reference to particular claim language, independent Claim 1 concerns a data preservation system for flash memory systems connected with a host system. The flash memory

system receives a power supply from the host system and energizes a supplemental energy store therewith. The flash memory system is in communication with the host system via an interface bus, and upon loss of the host system power supply, the flash memory system actively isolates the connection to the host system power supply and the interface bus. The flash memory then employs the supplemental energy store to complete pending write operations to flash memory.

Independent Claim 2 concerns a data preservation system for flash memory systems receiving a power supply and experiencing a power failure thereof. The data preservation system includes a detection circuit in communication with the power supply and an auxiliary power source. Upon detection of a power failure by the detection circuit, an isolation circuit isolates the auxiliary power source. Controller circuitry then completes pending operations storing data from volatile memory into flash memory using the auxiliary power source.

Independent Claim 6 concerns a method for preserving data in flash memory systems experiencing a power failure. An auxiliary power source is charged with a supply voltage. Upon detecting a loss of power of the supply voltage, the auxiliary power source is isolated and used to complete pending operations storing data stored in volatile memory into flash memory.

Independent Claim 17 concerns a data preservation system that includes a power detector and an auxiliary power source. An isolator isolates the auxiliary power source when the power detector detects a loss of power. A data store then completes pending operations storing data into non-volatile memory powered by the auxiliary power source.

Independent Claim 19 concerns a method for storing data in a memory device. Upon detecting a power reduction, an auxiliary power source is decoupled. Pending operations storing data into non-volatile memory are then completed using the auxiliary power source.

Independent Claim 22 concerns a memory device. Upon detecting a loss of power, the memory device isolates itself. The memory device then completes pending operations storing data in a non-volatile manner using auxiliary power.

Independent Claims 1, 2, 6, 17, 19, and 22 have been amended to emphasize the feature of using auxiliary power to complete pending operations storing data to non-volatile/flash memory in the event of power loss or failure. The applied reference Li is not understood to disclose or suggest at least this feature of the claimed invention.

Li concerns a hardware assisted memory module ("HAMM") for storing digital information in a computer system. During normal operation, the HAMM is understood to operate as conventional volatile memory, such as RAM. Upon detecting a trigger event in the computer system, however, the HAMM is understood to use an auxiliary power supply to back up the digital information stored in volatile memory into a non-volatile memory. Once operation of the computer system has returned to normal, the HAMM is understood to copy the digital information back to the volatile memory from the non-volatile memory.

Accordingly, the operation of the HAMM described in Li differs significantly from that of the present invention. Li is understood to describe a volatile memory device which, in the absence of a trigger event, never copies digital information to non-volatile memory. Therefore, Li is not understood to ever have a pending operation copying digital information to non-volatile memory prior to detecting a trigger event. While Li is understood to disclose copying digital information to the non-volatile memory after a trigger event has been detected, this process is understood to be a new process initiated after the trigger event and not a pending process that needs to be completed upon detecting a trigger event. Therefore, Li is not understood to disclose

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or suggest at least the feature of using auxiliary power to complete pending operations storing data to non-volatile/flash memory in the event of power loss or failure.

Therefore, the applied reference is not understood to disclose or suggest all of the claimed features of the invention. Accordingly, independent Claims 1, 2, 6, 17, 19, and 22 are believed to be patently distinguishable over the applied reference. Reconsideration and withdrawal of the § 103(a) rejection of Claims 1, 2, 6, 17, 19, and 22 is respectfully requested.

The other claims remaining in the application are dependent from the independent claims discussed above, and, therefore, are believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, it is believed that the entire application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney may be reached in our Orange County office by telephone at (949) 851-0633. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

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